



Subclinical Cardiovascular Disease in Older Adults: Insights from the Cardiovascular Health Study

Paulo H.M. Chaves, MD, PhD; Lewis H. Kuller, MD, DrPH; Daniel H. O'Leary, MD; Teri A. Manolio, MD, PhD; Anne B. Newman, MD, MPH

Abstract:

As a population-based, longitudinal study of nearly 6000 older American adults, the Cardiovascular Health Study provides an excellent opportunity to assess the roles of traditional and novel cardiovascular risk factors in the development of coronary heart disease. Cardiovascular Health Study investigators have analyzed both traditional risk factors, such as diabetes, hypertension, and smoking, and new risk factors, such as hemostatic factors, inflammatory markers, exposure to infectious agents, and genetic determinants. These analyses have led to several important conclusions. First, older adults without previous cardiovascular events have a tremendous burden of subclinical vascular disease, which may change how physicians view risk factor modification in this age group. Second, some traditional cardiovascular risk factors lose importance

as predictors of cardiovascular disease among older adults. Third, even modest elevations in fasting blood glucose or systolic blood pressure - below the levels used to define diabetes or hypertension - may have prognostic implications. Fourth, novel cardiovascular risk factors may add further information about cardiovascular disease risk in older adults. Promising potential candidates identified in the Cardiovascular Health Study include markers of hemostatic activation, fibrinogen, factor VIII coagulant activity, C-reactive protein, and exposure to herpes simplex virus-1 and possibly chlamydia. Future Cardiovascular Health Study investigations will help to clarify which combination of traditional and newer risk factors provides the best estimate of cardiovascular risk for older adults.

Am J Geriatr Cardiol. 2004; 13(3): 137-51

Key Points

1. Clinically relevant subclinical atherosclerosis is as prevalent as clinically manifest cardiovascular disease (CVD).
2. Presence of subclinical CVD can be safely and noninvasively assessed in clinical settings. Among noninvasive tests, electrocardiography, echocardiography, and the determination of the ankle-arm index have the highest clinical feasibility.
3. In addition to increasing the risk of incident cardiac events and mortality, subclinical CVD has been linked to decline in physical and/or cognitive function, as well as frailty and disability. Whether intervention aiming at modifying subclinical CVD could offer an opportunity for prevention of functional decline remains to be established.
4. Noninvasive measures of subclinical CVD predict incident CVD events above and beyond the impact of traditional CVD risk factors, thus having the potential to substantially improve the ability to identify older adults at high risk for CVD who might benefit the most from more aggressive pharmacologic preventive interventions. How to use subclinical CVD measures to optimize clinical decision making is the topic of ongoing research efforts.



Paulo H. M. Chaves, MD, PhD